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ABSTRACT

This paper explores the following questions: Does the demand/supply allocation process affect the return migrants receive for their human capital attributes? Specifically, do returns to migration vary across places of destination, and does this variation reflect labor supply and demand differentials and/or other characteristics of places of destination? Analysis of the impact of selected characteristics of destinations on the socioeconomic attainment of migrants, using data for 1970 and changes between 1970 and 1976, reveals that substantial variation exists between Standard Metropolitan Statistical Areas (SMSA) with respect to annual earnings returns to occupational and educational attainment, and occupational attainment returns to educational attainment. The level of these returns not only declined across the board between 1970 and 1976, but between-SMSA variations increased as well. Analysis also indicates that SMSA differences in socioeconomic returns to migrants, particularly among the college educated, were more responsive to factors reflecting changing economic conditions than to those of nonmigrants in 1970, but changes in socioeconomic returns occurring during the 1970-76 period were not related to these factors for a smaller number of SMSA's. Tables illustrate the findings statistically. (Author/PS)

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INTERCITY VARIATIONS IN RETURNS TO MIGRATION

Franklin D. Wilson

CDE Working Paper 84-22

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Intercity Variations in Returns to Migration*

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Abstract

This paper reports the findings of an analysis of the impact of selected characteristics of destinations on the socioeconomic attainment of migrants. Results from analysis of data for 1970 and changes between 1970 and 1976 indicate substantial variation exists between SMSA's with respect to annual earnings returns to occupational and educational attainment, and occupational attainment returns to educational attainment. The level of these returns not only declined across the board between 1970 and 1976, but between-SMSA variations increased as well. Further analysis indicates that SMSA differences in socioeconomic returns to migrants, particularly among the college educated, were more responsive to factors reflecting changing economic conditions than those of nonmigrants in 1970, but changes in socioeconomic returns occurring during the 1970-76 period were not related to these factors for a smaller number of SMSA's.

INTERCITY VARIATIONS IN RETURNS TO MIGRATION

Introduction

The association of migration with socioeconomic attainment is a well established generalization in the demographic literature. Migration is not only highly selective with respect to socioeconomic attributes (see Shaw, 1975; Ritchey, 1976; Wilson, 1981 for reviews) but it is also associated with increased income and occupational attainment (Blau and Duncan, 1967; Lansing and Mueller, 1967; Wilson, 1982). Moreover, migration also plays an important role at the aggregate level, namely, it can be viewed as an equilibrating mechanism, wherein area differentials in the demand for labor lead to a reallocation of the labor supply (Greenwood, 1981; Cebula, 1979; DeJong and Gardner, 1981; Mueller, 1982). Previous research has established that the flow of migrants to places is in response to economic conditions (particularly economic growth), as well as a host of other factors (see Mueller, 1982). This paper seeks to extend our knowledge in this area by focusing on the question of whether the demand/supply allocation process affects the return migrants receive for their human capital attributes. Specifically, the investigation of two issues is of concern here: (1) whether returns to migration vary across places of destination, and (2) whether this variation reflects labor supply and demand differentials and/or other characteristics of places of destination.

It is generally assumed that the flow of migrants to specific destinations tends to be influenced greatly by available job opportunities and the amount of real wages paid to workers. A great deal of the discussion on this issue has focused on the extent to which level of earnings, changes therein, and job vacancies stimulate inmigration. No

attention has been given to the question of whether the amount of returns migrants receive for their human capital attributes may also reflect market supply and demand considerations. For example, when the demand for labor is expanding in an area, the opportunity for individuals to upgrade their occupational standings and earnings should be greater. Conversely, as the demand for labor contracts, the net benefits associated with changing jobs in the aggregate should also decline. Although an individual migrant may select that destination which, in his estimation, has the potential for maximizing his socioeconomic standings, it does not necessarily follow that the average returns received by migrants going to a specific destination will be higher than that received by the migrants selecting any other destination.

Previous research focusing on the achievements of individual migrants tends to attribute their higher rates of socioeconomic advancement to motivations such as achievement orientation, willingness to take risks, drive, and, in the case of repeaters, knowledge gained from previous moves (Blau and Duncan, 1967; Davanzo and Morrison, 1981; Wilson, 1982). These explanations ignore the possible role played by structural factors associated with areas that tend to attract migrants. At any one point in time, a certain percentage of vacant positions in a local labor market will be filled by migrants, which will probably vary with the nature of the positions and the number available for occupancy. This suggests that opportunity is a critical factor, but there are probably others that also operate to disproportionately advance the socioeconomic attainment of migrants.

The economic structure of a place should affect the average socioeconomic returns received by migrants choosing that place as a

destination. Previous studies point to a number of factors that influence interarea variation in wages and income level—such as industrial structure, city size, cost of living, environmental and social/cultural amenities, region, and changes in economic opportunities (see Bartlett, et al., 1982; Danziger, 1976; Goldfarb and Yezer, 1976).

City size is often identified as being the most important of these factors, partly because it is strongly related to most of the other factors. Income and occupational status are both thought to increase with city size, because size is associated with the presence of a diversified and dynamic labor market, capable of generating new opportunities and increasing the possibility of individuals securing highly specialized positions unavailable at other locations (Featherman and Hauser, 1977:Chapter 10; Mueller, 1974; Thompson, 1965; Goldfarb and Yezer, 1976). Aggregate level studies of these relationships overlook the role of compositional factors, as they operate at the individual level in promoting interarea variation in income and occupational status. Results from analysis of data from the Occupational Change in a Generation study, for example, indicate that although city size does seem to have an effect, this effect is small relative to that of other factors that tend to allocate individuals into different income and occupational categories (see Mueller, 1974; Hauser and Featherman, 1977). In passing, it should be noted that these studies were concerned principally with the effects of cities on the status allocation process, and thus cannot explain net differences between cities, even though they may be small.

In the analysis presented below, the effects of attributes of places of destination on returns to socioeconomic attainment are explored further once the compositional effects mentioned earlier are taken into account.

Particular attention is directed toward evaluating the effects of factors that are reflective of changing supply and demand conditions in cities. The fundamental question that is to be addressed is that of whether the socioeconomic returns of migrants are enhanced or reduced by choice of destination, particularly if the latter is characterized by either an expanding economy or a stagnant declining economy. Although previous studies do not address this issue directly, it can be assumed that areal changes in economic opportunities, whether in the form of changes in wages or changes in employment, are more likely to be reflected in the socioeconomic standing of migrants (or new entrants into the labor force generally). Employers can more easily adjust the occupational status and earnings of new hires and transferred employees to take account of current labor market conditions. Migrants are at a disadvantage when the demand for labor is low or is declining with respect to securing the most prestigious and economically remunerative jobs. This is because distance acts as an impediment to the transmission of information about job vacancies, and also delays the response time to information about job vacancies. Nonmigrants, because of the length of residence, should also have greater knowledge of interfirm variations in job benefits within a labor market area, increasing their chances of greater socioeconomic attainment. On the other hand, migrants are in a more favorable position if demand is high, and there exist a limited number of residents of the area with the required skills to fill particular kinds of positions.

Data and Methods

The analysis of intercity variation in returns to migration is separated into two stages. In the first stage, annual earnings returns to occupational status and education attainment, and occupational status returns to education attainment are estimated for all males, and male

migrants age 18-64, living in 113 separate SMSA's in 1970 and 35 SMSA's in 1976. The estimates are derived from equations in which occupational status in 1970 and 1976, and annual earnings in 1969 and 1975 are treated as dependent variables. These SMSA's were selected because for each there were at least 75 sampled respondents, identified in the 1/100 Public Use Sample for county groups of the 1970 Census (5% universe), and the 1976 Survey of Income and Education, who migrated from another labor market area between 1965 and 1970, or 1970 and 1976. This number of respondents were judged sufficient to derive stable estimates of coefficients for each SMSA sub-sample. The first stage estimation equations were of the following form:

$$\begin{aligned} \text{STATUS}_{t \text{ or } t+n} = a &+ b_1 \text{ EXPERIENCE} + b_2 \text{ EXPERIENCE}^2 + b_3 \text{ GRADE} \\ &+ b_4 \text{ COLLEGE} + b_5 \text{ DEGREE} + b_6 \text{ MARRIED} \\ &+ b_7 \text{ BLACK} + b_8 \text{ WEEKS} + b_9 \text{ HOURS} + b_{10} \text{ PRIVATE} \\ &+ b_{11} \text{ PUBLIC} + b_{12} \text{ DISTRIBUTIVE} + b_{13} \text{ GOODS} \\ &+ b_{14} \text{ SOCIAL} + b_{15} \text{PERSONAL} + e \qquad (1) \end{aligned}$$

$$\begin{aligned} \text{EARNING}_{t \text{ or } t+n} = a &+ b_1 \text{ STATUS}_t + b_2 \text{ EXPERIENCE} + b_3 \text{ EXPERIENCE}^2 \\ &+ b_4 \text{ GRADE} + b_5 \text{ COLLEGE} + b_6 \text{ DEGREE} + b_7 \text{ MARRIED} \\ &+ b_8 \text{ BLACK} + b_9 \text{ WEEKS} + b_{10} \text{ HOURS} + b_{11} \text{ PRIVATE} \\ &+ b_{12} \text{ PUBLIC} + b_{13} \text{ DISTRIBUTIVE} + b_{14} \text{ GOODS} \\ &+ b_{15} \text{ SOCIAL} + b_{16} \text{ PERSONAL} + e \qquad (2) \end{aligned}$$

where $\text{STATUS}_{t \text{ or } t+n}$ is occupational status in 1970 or 1976 (Duncan's SIE index); $\text{EARNING}_{t \text{ or } t+n}$ is annual earnings in 1969 or 1975; EXPERIENCE and

EXPERIENCE^2 are potential work experience and potential work experience squared (the former is defined as age minus five plus years of schooling completed); GRADE is years of schooling completed, and ranges from 0 to 12, where individuals with 13 or more years of schooling are coded 12; COLLEGE is years of college completed, and ranges from 0 to 5, where individuals with less than one year of college completed are coded 0 and individuals with 5 or more years of college completed are coded 5; DEGREE is coded one if the individual completed four years of college; MARRIED is coded one if the individual is married; BLACK is one if the individual is black; WEEKS is the number of weeks worked in 1969 or 1975; HOURS is the number of hours worked during the week prior to the interview; PRIVATE and PUBLIC are one if an individual works in a private or public organization respectively (self-employed is coded zero on both variables); and DISTRIBUTIVE, GOODS, SOCIAL, and PERSONAL are one if an individual works in a distributive, goods, social, or personal service industry respectively (individuals working in transformative industries or industries not reported are coded zero). [See Singelmann and Browning (1980) for a description of these industry groups.]

Results for the total male population are included to provide a frame of reference with which to judge the significance of the results for migrants. The primary issue is not simply that of whether differences in the economic conditions of places result in differences in the socioeconomic returns of individuals but rather, whether these conditions differentially affect the standings of migrants. The expectation is that such differentials should exist if it is plausible that the initial impact of changing economic conditions would be transmitted via the socioeconomic standings of new entrants into a local labor market.

Table 1 reports summary statistics for SMSA's derived from the estimation of equations (1) and (2) for 1970. (The results for 1976 will be presented in another section.) The independent variables in each of these equations explain an average of 42 percent of the total variation in annual earnings and occupational status in the case of the total samples, and 48 percent of the variation in these variables in the case of the migrant samples. Moreover, it should be noted that the multiple R^2 values for the migrant samples exhibit twice the amount of variation across SMSA's than those for the total sample.

In another analysis (not reported here) an effort was made to determine whether SMSA of residence affected the occupational status and annual earnings of sample respondents. This was accomplished by estimating equations (1) and (2) for the total sample and the total subsample of migrants, adding to each a variable representing the deviation of each SMSA mean from the mean of the total sample (total migrant subsample) for each dependent variable. The inclusion of this deviation value, which represents between-SMSA variation in the dependent variables, is analogous to including a dummy variable for each SMSA in the sample. The inclusion of this variable resulted in an additional 1.5 percent of the variation in occupational status being explained, and an additional 3 percent of explained variation in annual earnings in the case of both the total and migrant subsamples. These results are consistent with those reported by Mueller (1974), indicating SMSA of residence does have a small but statistically significant additive effect on the average level of occupational status and earning obtained by respondents.

In the second stage of the analysis, multiple regression equations are estimated in which the dependent variables are transformations of the

coefficients for GRADE, COLLEGE, and STATUS obtained from estimating equations (1) and (2). Table 2 provides a description of all the variables included in this part of the analysis. The estimation of separate equations for the two educational subgroups is based on the assumption that labor markets are segmented by educational levels and hence respond differently to individuals on that basis. The use of the return coefficients for GRADE, COLLEGE, and STATUS are preferred, since the influence of other attributes of workers that affect occupational and earnings attainment are taken into account. These estimates are free of the compositional effects alluded to earlier, and their use will allow us to get a clearer picture of the effects of attributes of place of destination. In the actual estimation process, the ratios of the return coefficients divided by their standard errors are used. These ratios are used to reduce the heteroscedasticity of the error variance resulting from the fact that the variance of the coefficients are not constant (Rao and Miller, 1971:77-80). For the same reason, each independent variable related to the return coefficients are also expressed as ratios of the standard error of these coefficients.

1970 Return Coefficients

Table 3 reports average net return coefficients for the 113 SMSA's included in the 1970 sample indicating the effects of education levels and occupational status on 1969 annual earnings, and the effects of education levels on occupational status for all males and male migrants. The ratios of the net return coefficients to their respective standard errors indicate that educational levels have statistically significant effects on both occupational status and annual earnings, and occupational status has significant effects on annual earnings. The values for the total sample

reflect primarily those of nonmigrants, since migrants represent only 10 percent of the total. These results are consistent with the findings of national surveys on the determinants of socioeconomic attainment (see Featherman and Hauser, 1978). Moreover, these results also indicate that SMSA of residence does affect the amount of return individuals receive for the human capital attributes of educational attainment and occupational status (in the case of annual earnings). This is indicated by the sizes of the ratios of the coefficients to their standard error. Coefficients that are twice the size of their standard errors would be statistically significant at approximately the (.01) level if such a test were applied. It should be emphasized, however, that the between-SMSA variation in return coefficients, (as indicated by the standard deviations), although it appears substantial, still accounts for no more than 3 percent of the total variation associated with the annual earnings and occupational status of individuals.

Differences in the sizes of the net return coefficients between migrants and the total sample can also be observed in Table 3, although they are not substantial, except in the case of earnings returns to occupational status. The return coefficients for migrants exhibit much greater variations across SMSA's than those for the total sample. Migrant/nonmigrant SMSA differences in sample sizes may account for a portion of the differences in coefficient variability. Another possibility is that the net returns of migrants may be more reflective of changing labor market conditions than those of nonmigrants. Virtually all of the migrants included in this analysis moved to a different labor market, indicating that a change in job, though not necessarily employer,

was involved. Employers can more easily adjust the occupational status and earnings of new hires and transferred employees to take account of current labor market conditions. If this observation is reasonable, between-SMSA variations in socioeconomic returns to migrants should be more systematically related to changing labor market conditions than those for the total sample.

A test of the plausibility of the above observation can be accomplished by relating SMSA specific return coefficients to factors believed to be related to area differences in earnings and occupational status. Table 4 presents the results of this test for the total sample of males and male migrants (see Table 2 for a definition of the variables included in the analysis). The dependent variables are the partial regression coefficients (derived from the estimation of equations 1 and 2) divided by their standard errors, indicating the effects of level of education and occupational status on 1969 annual earnings and level of education on 1970 occupational status. In the discussion of results, primary attention will be given to the effects of variables that capture changing labor market conditions, i.e., ΔEMPLOY, ΔJOB, and ΔWAGES. [A cost of living index was not included in this analysis because its effects are captured by the annual wage variable.] The assumption is that returns to migrants should be affected to a greater extent by these factors than those for the total sample.

In general, it can be noted that less of the between-SMSA variations in earnings and occupational status returns, as indicated by the multiple R^2 values, are accounted for by the variables included in the equations for migrants. These results imply that the returns of migrants are influenced to a greater extent by conditions unique to individual SMSAs.

In the case of the effects of individual variables, it is clearly the case that labor force size is the most important factor related to both occupational and annual earnings returns. This finding is consistent with those of previous studies indicating that large size places offer certain agglomeration advantages not obtainable in smaller places. The effects of the other variables are more varied. In general, the statistically significant effects of variables indexing changing economic conditions in some of the equations indicate migrants, primarily those who have completed at least one year of college, do benefit more when local economies are expanding. The effect of changes in labor force size on annual wage returns for years of college and occupational status are positive and larger for migrants, and its effects on occupational returns to years of college are statistically significant but not larger than that of the total sample. Similarly, a greater increase in new hires over layoffs and job quits (JOB) is positively related to occupational status returns to years of college among migrants. The positive coefficients for the effect of changes in SMSA wage level on earnings returns indicates that migrants benefit both with respect to graded schooling and years of college completed. In sum, the results indicate that the socioeconomic returns of migrants who have completed at least one year of college are more sensitive to changing labor market conditions than those of nonmigrants and migrants who have completed no more than high school. One possible interpretation of these results is that increases in the labor force of the SMSA's included in the sample occurred primarily as a result of expansion in positions requiring some college, and these individuals benefited more because employers had to go beyond the local labor market to hire persons to fill these positions. Job searches beyond local labor

markets for individuals with limited skills or no college training occur less frequently, because these individuals are more numerous in the area, and because employers have less of a long-term commitment to them (particularly since little or no training is involved).

Changes in Returns

In the previous section, static measures of socioeconomic returns were related to factors reflective of changing labor market conditions in SMSAs. The results from this specification indicate that the socioeconomic returns of migrants at destination, in some instances, were greater in those SMSAs that experienced increased economic growth between 1965 and 1969. A more appropriate specification might be to relate changes in labor market conditions to changes in returns to socioeconomic attainment. This specification requires the estimation of return coefficients for two points in time, and relating changes in these coefficients to changing labor market conditions. This approach is applied in this section based on the estimation of net return coefficients for 1970 and 1976 for individuals living in 35 of the SMSAs included in the analysis reported in the previous section.

Table 5 reports average net return coefficients for 1976 and changes between 1970 and 1976 for the effects of levels of education on annual earnings and occupational status, and the effect of occupational status on annual earnings for 35 SMSA's. Between-SMSA variations in the return coefficients for 1976, as indicated by the standard deviations and coefficients of variations, are substantial and, in all but one instance, are greater than the variations reported for the 113 SMSA's in 1970. With respect to the mean return coefficients for 1976, it can be observed that substantial differences between all males and male migrants exist only in

the case of annual earnings returns to graded schooling. Moreover, as was the case with results reported previously for the larger sample of SMSA's in 1970, the net return coefficients for migrants exhibit much greater variation across SMSA's, and the statistical significance of the coefficients, as estimated by the ratio reported in the bottom panel of Table 5, are substantially less than that reported for the total sample. Sample size differences between migrants and nonmigrants and the PUS and SIE samples, and the fact that the mean values were computed over fewer SMSA units in 1976, probably contributed to the differences noted. It is also likely that the 1975-76 recession contributed to these differences as well, given that all local economics did not feel the effect of this factor to the same extent.

The measures of change reported in the last column of Table 5 reveal several interesting patterns. First, mean returns to education attainment and occupational status, in most instances, declined considerably between 1970 and 1976, indicating that the value of a year of schooling with respect to occupational status and earnings, and the value of a unit of occupational status with respect to earnings were less in 1976 than in 1970. Migrant/nonmigrant differences are greatest with respect to occupational status returns to education, in which returns to graded schooling declined by 16 percentage points and returns to college increased by 18 percentage points among migrants, and changed only to a minor extent among all males. Second, the percentages reported in the bottom panel indicate that the responsiveness of annual earnings to occupational status and education, and occupational status to education was subject to a great deal more variability across SMSAs in 1976 than in 1970. In other words, not only did the mean value of socioeconomic

returns decline, but the variation associated with the predictive value of both education and occupational status declined as well.

The results reported in Table 5 indicate substantial change in net return coefficients over the 1970-76 time period. The economic recession of 1975-76 probably contributed to the declines observed in earnings returns to both education and occupational status. Moreover, of immediate concern is whether changes in earnings and occupational returns during the 1970-76 period were systematically related to changes in economic opportunities, as indicated by changes in employment and earnings. A lagged regression model is used to assess these relationships. Essentially this involves estimating equations of the following form:

$$\begin{aligned} \text{RETURN}_t = a + b_1\ \text{RETURN}_{t+n} + b_2 \Delta\text{JOB} + b_3\ \text{EMPLOY(Log)} \\ + b_4 \Delta\text{EMPLOY} + b_5 \text{WAGES} + b_6 \Delta\text{WAGES} + b_7 \text{SOUTH} + e \end{aligned} \qquad (3)$$

where RETURN_t and RETURN_{t+n} refer to annual earnings returns to education attainment and occupational status in 1969 and 1975, and occupational status returns to education attainment in 1976 and 1976 (see Table 2 for a definition of the independent variables). Since a lagged measure of the dependent variables is included in the equation, the partial regression coefficients for all of the other variables can be interpreted as unit changes in the dependent variables caused by a unit changes in these variables.

Table 6 reports the results of applying equation 3 to the 35 SMSA's for which data are available. The multiple R^2 value reported in the bottom panel of the table indicates that equation three's ability to explain between-SMSA variation in changes in returns to socioeconomic attainment is considerably less than the previous effort to explain SMSA

variations in returns to socioeconomic attainment in 1970, particularly in the case of migrants. This difference is not due simply to the reduced number of variables in the equation, but is due more likely to the fact that the predictive power of the variables included is considerably less.

One can observe in Table 6 that not one of the indices of changes in economic opportunities i.e., JOB, EMPLOY, and Wages (in constant 1975 dollars)—has statistically significant effects on changes in the net return coefficients. These results imply that the socioeconomic returns of migrants are no more responsive to changing economic conditions than those of nonmigrants, which contradicts somewhat the findings reported in the previous section. Moreover, the previous findings are probably more robust than those reported in Table 6, because they are based on a larger number of SMSA's, and economic conditions in 1970 were more stable than they were in 1976.

Summary

This investigation focused on two issues: (1) whether socioeconomic returns to migration vary across places of destination, and (2) whether this variation reflects labor supply and demand differentials and/or other characteristics of places of destination. In regard to the first issue, results from analysis of data for 1970 and changes between 1970 and 1976 indicate substantial variation between SMSA's with respect to annual earnings returns to occupational status and educational attainment, and occupational status returns to educational attainment. The level of these returns not only declined across the board between 1970 and 1976, but between SMSA variations increased as well. Results from further analysis provided only partial support to the issue of whether SMSA differences in the socioeconomic returns to migrants are responsive to changing economic

conditions and other characteristics. Specifically, the results for 1970 indicate that the socioeconomic returns of migrants who have completed at least one year of college are more sensitive to changing labor market conditions--as indicated by changes in labor force size, ratio of new hires to quits and layoffs, and changes in wages between 1965 and 1969--than those of nonmigrants and migrants who have completed no more than high school. Moreover, changes in socioeconomic returns between 1970 and 1976 were not related to changing labor market conditions. The robustness of the analysis for the 1970 to 1976 period is suspect due to the limited number of SMSA's for which data are available, and the belief that the 1975-76 recession probably altered the nature of these relations.

Overall, this analysis has been basically exploratory in character, and the substantive value of the findings and their implications should be viewed in this context. The question of whether destination choice matters in regard to the ability of individuals to maximize the returns received for human capital attributes should be pursued further. The approach employed in this analysis differs from those used by previous studies as the measure of benefit or gains is not global in nature (as is, for example, annual income or wages). The substantive value or yield from future analyses would probably be enhanced if a larger number of SMSA's are considered. For example, the analysis focusing on 1970 included the 113 largest SMSA's as of that date, and the analysis of change between 1970 and 1976 included only the 35 largest SMSA's as of that date. The growth experience of these SMSA's (both economically and demographically), at least during the 1965-80 period, were not representative of those places that were smaller in size (see Wilson, 1984).

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Table 1. Summary statistics for SMSA's Derived from the Estimation of Equations (1) and (2)

	Mean Number of Observations	Dependent Variable			Multiple R^2s		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.
Subgroups							
Annual Earnings							
Total	2792	$7917	919	11.61	.4215	.034	8.07
Migrants	316	$7712	1327	17.21	.4712	.088	18.68
Occupational Status							
Total	2792	37.60	3.10	8.24	.4170	.044	10.55
Migrants	316	41.00	7.33	17.88	.4810	.099	20.58

Table 2. Description of Variables Included in Aggregate SMSA Analysis

Dependent Variables*	
R.GRADEe	Ratio of regression coefficient for annual earnings returns to graded schooling to its standard error.
R.COLLEGEe	Ratio of regression coefficient for annual earnings returns to years of college completed to its standard error.
R.OCCUPATIONe	Ratio of regression coefficient for annual earnings returns to occupational status to its standard error.
R.GRADEocc	Ratio of occupational status returns to graded schooling to its standard error.
R.COLLEGEocc	Ratio of occupational status returns to graded schooling to its standard error.
Independent Variables	
EMPLOY(Log)**	The natural log of size of SMSA labor force in 1965 or 1970
ΔEMPLOY**	Percentage change in SMSA labor force size between 1965 and 1969, or between 1970 and 1975
ΔJOB**	Average job accession rates between 1965 and 1969 or between 1970 and 1975.
WAGES**	Annual SMSA wages in 1965 or 1970
ΔWAGES**	Percentage change in annual SMSA wages between 1965 and 1969, or between 1970 and 1975, expressed in 1975 dollars
ENVIRONMENTAL***, HEALTH-EDUCATION	Quality of life indicators for SMSAs in 1970
SOUTH	Is one if an SMSA is located in the South region
WEST	Is one if an SMAS is located in the West region

Sources: * 1/100 PUS for county groups and the 1976 Survey of Income and Education
** Bureau of Labor Statistics, Employment and Earnings Reports for the years indicated
*** Liu (1976)

Table 3. Net Return Coefficients for the Effect of Education on Annual Earnings and Occupational Status, and the Effect of Occupational Status on Annual Earnings: Average SMSA Values for 1970

Subgroups and Variables	Net Return Coefficients			Ratio of Return Coefficient to Standard Error		
	Means	S.D.	C.V.	Means	S.D.	C.V.
TOTAL						
Annual earnings						
Graded Schooling	210.53	80.26	38.12	3.46	2.05	59.25
College	669.00	268.95	40.15	4.39	2.75	62.64
Occupational Status	51.17	10.56	20.64	9.00	5.48	60.89
Occupational Status						
Graded Schooling	2.43	.49	20.16	11.11	5.97	53.74
College	5.65	1.05	18.58	10.36	6.24	60.23
MIGRANTS						
Annual Earnings						
Graded Schooling	398.40	361.20	90.89	1.87	1.51	80.75
College	735.00	642.11	87.36	1.85	1.40	75.41
Occupational Status	35.66	22.66	63.54	2.53	2.12	83.97
Occupational Status						
Graded Schooling	3.03	1.63	53.83	3.36	2.18	64.81
College	4.67	2.71	58.14	2.99	2.13	71.22

Table 4. Analysis of the Determinants of Earnings Returns to Education and Occupational Status, and Occupational Returns to Education

Variables	1969 Annual Wages						1970 Occupational Status			
	R.GRADE		R.COLLEGE		R.OCCUPATION		R.GRADE		R.COLLEGE	
	Total	Migrants	Total	Migrants	Total	Migrants	Total	Migrants	Total	Migrants
EMPLOY (Log)	24.1783*	-7.7919	79.0761*	43.8437*	7.7967*	8.4550*	.2354*	.1982*	.5615*	.3352*
Δ EMPLOY	.0000	- .0000	.0059	.0188*	.0008*	.0010*	.0001*	.0000	.0001*	.0001*
Δ JOB	NA	NA	NA	NA	NA	NA	-.0065	.0375	-.0732*	.1489*
WAGES	-.0079	-.0159	-.0040	-.0808*	-.0010	-.0007	NA	NA	NA	NA
Δ WAGES	.2272	7.3380*	-.1365	18.6528*	.1086	-.2699	NA	NA	NA	NA
ENVIRONMENT	-26.8993	-233.1386*	-13.7359	-57.2364	-.4853	2.4109	-.0974	-.1777	-.8931*	-.6694*
HEALTH-EDUCATION	7.6637	67.4157*	40.8445	93.0945*	.0513	-7.9168*	.0773*	.0814	.0259	.1612
SOUTH	.3259	-.0268	.6899*	.3198	-.0018	-.5686*	-1.3756	.1654	-1.4732*	-.8160*
WEST	-.1747	.0000	-.7893*	.3011	-.0062	.4040	-.7763	-.2050	-.2733	-.0625
Intercept	.1828	.3998	-.1919	.3976	-.0129	-.5449	2.0342	.8500	1.2142	.5042
R^2 (corrected)	.6715	.5608	.6985	.3428	.9022	.6796	.9116	.6879	.9383	.5951
Observations	113	113	113	113	113	113	113	113	113	113

Table 5. Net Return Coefficients for the Effect of Education on Annual Earnings and Occupational Status, and the Effect of Occupational Status on Annual Earnings: Average SMSA Values for 1976 and Changes Between 1970 and 1976 (N=35)

	Means	1976 S.D.	C.V.	Percentage Change in Return Coefficients 1970-1976
	Net Return Coefficients			
TOTAL				
Annual Earnings *				
Graded Schooling	341.43	189.24	55.43	-20.9
College	719.94	267.08	37.10	-47.6
Occupational Status	63.61	15.22	23.93	-46.9
Occupational Status				
Graded Schooling	2.29	.41	17.90	1.0
College	5.20	.80	15.38	-4.2
MIGRANTS				
Annual Earnings *				
Graded Schooling	722.99	533.10	73.74	-20.3
College	767.07	1010.80	131.79	-43.3
Occupational Status	60.63	49.74	82.04	-32.5
Occupational Status				
Graded Schooling	2.34	2.08	88.89	-16.1
College	5.01	2.74	54.69	17.6
	Ratio of Return Coefficient to Standard Error			
TOTAL				
Annual Earnings				
Graded Schooling	2.19	1.29	58.90	-47.6
College	2.82	1.32	446.81	-50.2
Occupational Status	5.38	1.71	31.78	-57.4
Occupational Status				
Graded Schooling	5.25	1.58	30.10	-64.8
College	7.21	1.72	23.86	-50.8
MIGRANTS				
Annual Earnings				
Graded Schooling	1.33	.86	64.66	-52.8
College	1.12	1.40	125.00	-52.7
Occupational Status	1.84	1.38	75.00	-52.3
Occupational Status				
Graded Schooling	1.71	1.14	66.67	-65.6
College	2.57	1.39	54.09	-40.5

*Expressed in constant 1975 dollars

Table 6. Determinants of Change in Annual Earnings Returns to Education and Occupational Status, and Occupational Status Returns to Education: 1970-76

1975 Annual Earnings *

	R. GRADE		R. COLLEGE		R. OCCUPATION	
	Total	Migrants	Total	Migrants	Total	Migrants
ΔJOB	NA	NA	NA	NA	NA	NA
EMPLOY (Log)	56.4786*	-100.1949*	3.9228	-71.4804	1.6630	11.1214
ΔEMPLOY	10.3402	-16.5500	7.8501	62.3663	.8676	.7571
WAGES	-.0493*	.1709*	.0374	.0865	-.0014	-.0183*
ΔWAGES	-3.3743	-15.4754	6.5181	3.2463	.3119	.7736
SOUTH	-.6565	.2929	.0298	.3133	-.1135	.2014
$RETURN_{t-n}$	-.0891	-.2741	.2472*	.5786*	.2934*	.6935*
Intercept	.9523	.3321	-.1695	-.0881	1.9020	.9147
R^2 (corrected)	.2511	.0807	.5955	.1621	.5007	.2123
Observations	35	35	35	35	35	35

1976 Occupational Status

	R. GRADE		R. COLLEGE	
	Total	Migrants	Total	Migrants
ΔJOB	-.0717	-.0637	.0689	-.2410
EMPLOY (Log)	.0547*	-.1890	.1261*	-.0092
ΔEMPLOY	-.0252	.2598	.0624	-.2420
WAGES	NA	NA	NA	NA
ΔWAGES	NA	NA	NA	NA
SOUTH	.6444*	.855	.4131	-.4527
$RETURN_{t-n}$	.6668*	1.6503	.3303*	-.2896
Intercept	.4691	1.4177	1.8653	6.4856
R^2 (corrected)	.7221	.0000	.7687	.0000
Observations	35	35	35	35

*Expressed in constant 1975 dollars